Translation

PCT/EP2003/004006

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference K 58 921/7ch	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP2003/004006	International filing date (*day/month/year*) 16 April 2003 (16.04.2003)	Priority date (*day/month/year*) 19 April 2002 (19.04.2002)
International Patent Classification (IPC) or national classification and IPC B42D 15/00		
Applicant GIESECKE & DEVRIENT GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☒ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
31 October 2003 (31.10.2003)	15 July 2004 (15.07.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP2003/004006

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-23, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☒ the claims:

pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-21, filed with the letter of 04 June 2004 (04.06.2004)

☒ the drawings:

pages 1/4-4/4, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP2003/004006

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

☐ restricted the claims.

☐ paid additional fees.

☐ paid additional fees under protest.

☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

☐ complied with.

☒ not complied with for the following reasons:

SEE SEPARATE SHEET

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

☒ all parts.

☐ the parts relating to claims Nos. _____ .

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3

Lack of unity of invention

The Examining Authority has established that this international application contains a plurality inventions, or groups of inventions, which are not linked by a single general inventive concept (PCT Rule 13.1); the groups are as follows:

A: claims 1-13, 20 and 21;

B: claims 14-19.

The features that are common to all the inventions or groups of inventions are as follows:

security document with a security element, said security element being made of a material that can be optically modified by means of an electrical or magnetic field.

However, these features are known from D1, D2, D3 or D4 (see point 1. below).

It can be seen from a comparison of the present groups of claims with the aforementioned documents that the following features make a contribution to the prior art and can therefore be regarded as special technical features within the meaning of PCT Rule 13.2:

Group A: for the purpose of verification, the security document is prepared in such a way that the material can be optically modified by introducing the document into an external electrical or magnetic field.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3

Group B: in particular, in the production of the security document, the microcapsules are activated by means of a swelling agent.

The problems that can be regarded as being solved by the special technical features are as follows:

Group A: verification;
Group B: production.

Thus, there is no unity of invention in respect of either the special technical features or the problems solved (PCT Rule 13.1 and 13.2).

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	14-19	YES
	Claims	1-13, 20, 21	NO
Inventive step (IS)	Claims	14-19	YES
	Claims	1-13, 20, 21	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents:

D1: WO-A-0104832

D2: EP-A-1024470

D3: WO-A-0036560

D4: WO-A-0188607

D5: EP-A-0721176.

D1 discloses (see in particular page 1, lines 2-5; page 7, lines 12-28; page 10, lines 19-22; page 11, lines 17-23) a security document with a display device as a security element. "Electronic paper" can be used for the display device (page 11, lines 17-23).

D2 describes (see in particular paragraphs 1-2 and 6) a security document comprising small spheres, said spheres being controlled electronically to display two different colours.

D3 discloses (see in particular page 1, lines 2-3; page 3, lines 11-30; page 5, lines 1-9; page 12, line 4 to page 22 line 25) a security document with microcapsules that can controlled electronically.

D4 discloses (see in particular page 1, first paragraph; page 2, final paragraph) the use of "Gyricon" devices for security documents.

D5 describes (see in particular column 1, line 1 to column 4, line 13; figures 1-8) a method for the production of a "Gyricon" device, in particular including the swelling process.

2. The subject matter of claims 1-13, 20 and 21 lacks novelty (PCT Article 33(2)).

2.1 Claim 1

The material can be optically modified by means of an electrical field or a magnetic field, regardless of whether the field is external or internal. It is important to determine in addition whether the term "external" means, for example, "external relative to the security document" or "external relative to the material". Said term does not specify where electrodes may be located. Moreover, even if the electrodes are on the security document, the field is, in part, also external relative to the security document.

However, even *were* the term "external" to have the meaning stated by the applicant, namely that the electrodes are not arranged on the security document, the characterising part fails to restrict the scope of protection; the only requirement of the security document is that it must be *suitable* for the material to be optically modified by introducing

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the document into an external electrical or magnetic field. However, said feature is already described in the preamble.

Since the characterising part does not restrict the subject matter of claim 1, the subject matter of said claim is known from D1, D2, D3 or D4 (see point 1. above).

2.2 Claims 2-13

The subject matter of claims 1-8, 10 and 13 is known from D1; the subject matter of claims 1-10 and 13 is known from D2; the subject matter of claims 1-13 is known from D3; and the subject matter of claims 1-8 and 10-13 is known from D4 (see point 1. above).

2.3 Claim 20

It is essential to determine what the verification process involves. The application has been interpreted in the sense that the security document is exposed to an electrical or magnetic field (external or internal) and verification is successful if the material of the security document reacts. If the material of the security document fails to react, verification is unsuccessful. In the event of a reaction, the Gyricons rotate and a different colour is displayed.

Thus, exposing the security document to an electrical or magnetic field in the presence of a witness who can ascertain whether the material reacts constitutes a verification process.

According to D1 (see page 9, lines 28-33 in conjunction with page 1, lines 17-19), the field is created in the device (10), in other words not in the security document. The magnetic field is explicitly disclosed and the electrical field is implicit in that an electrical field is required for "electronic paper". For example, if the available credit displayed were to be "500" and the user were to spend "100" but the display continued to show "500" after the transaction, instead of "400", a discrepancy would be evident and verification would be unsuccessful. In response to the assertion that "verification" is not the intention of the user in D1, it must be observed that all the method steps required for the verification and described in claim 20 are implemented in D1 and that the intention of the user does not constitute a technical feature.

Thus, all the physical technical features of claim 20 are known from D1.

The security document in D3 is exposed to an external electrical field (see page 20, lines 6-9). Consequently, the subject matter of claim 20 is also known from D3.

2.4 Claim 21

The subject matter of claim 21 is known from documents D1 or D3.

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3. Observation relating to the verification process

The use of Gyricons in security documents is known from D4 (see point 1. above). If the problem relates to the way in which authenticity is to be verified, exposing the security document to an external electrical field is an obvious solution. For example, a person skilled in the art would not produce banknotes comprising electrodes because this would be impractical and too costly. For example, if a banknote contains a feature that can only be seen using UV radiation, the UV light source is not incorporated in the banknote. In the case of a Gyricon security feature, a person skilled in the art would configure the verification system externally, not on the banknote. Thus, in the light of the closest prior art, document D4, the subject matter of claim 20 is not inventive.

4. Claims 14-19

4.1 Claim 14

The closest prior art is to be found in document D5, for example.

A method according to claim 14 differs from the disclosure of document D1 in that the optically modifiable material is in a non-activated state when it is applied to the security document.

The microcapsules in D5 are first activated (column 3, line 45 to column 4, line 13) and then

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introduced into the bonding agent (column 3, lines 6-34) which is subsequently applied to the security document.

The effect of this difference is to ensure that the swelling, and hence the activation, of the microcapsules does not take place until they are on the security document.

The problem addressed by the invention is that of achieving said effect.

Since the method according to claim 14 appears to be more costly and more complex than that of D5, a person skilled in the art would not modify the method according to D5. Once the microcapsules are embedded in the bonding agent, it is more difficult for the swelling agent to be brought into contact with the microcapsules. The method would not work with every bonding agent. In D5, it is considered advantageous to be able to use as many bonding agents as possible (column 3, line 27-34). A person skilled in the art therefore has additional reasons for not modifying the method according to D5.

The search report citations do not suggest the solution according to claim 14 (none of documents D1 to D4 mentions the production method involving swelling).

4.2 Claims 15-19 are dependent on claim 14 and thus likewise satisfy the requirements of the PCT in respect of novelty and inventive step.